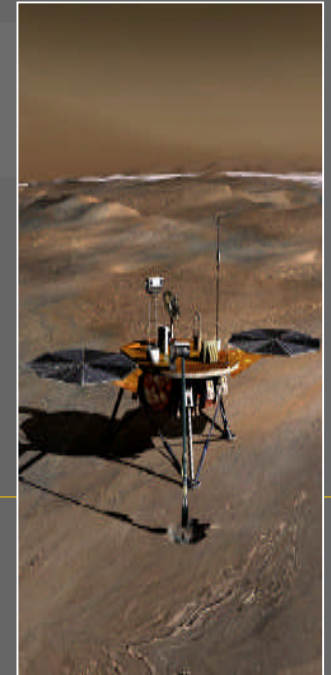
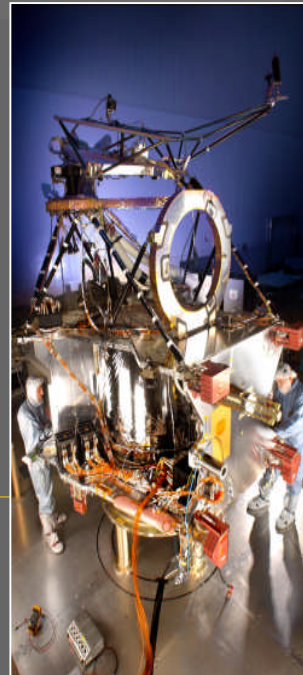
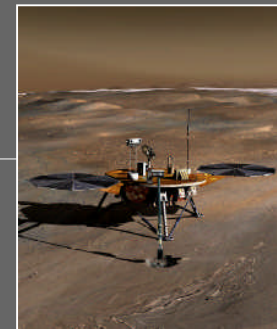
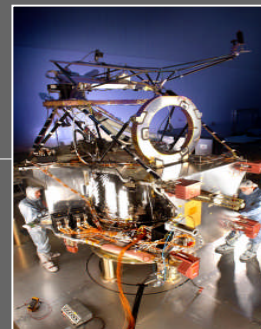


Pursuing Opportunities at JPL

Andre Stefanovich
Manager, Flight, Project & Program
and University Subcontracts Sections
Jet Propulsion Laboratory



JPL Overview

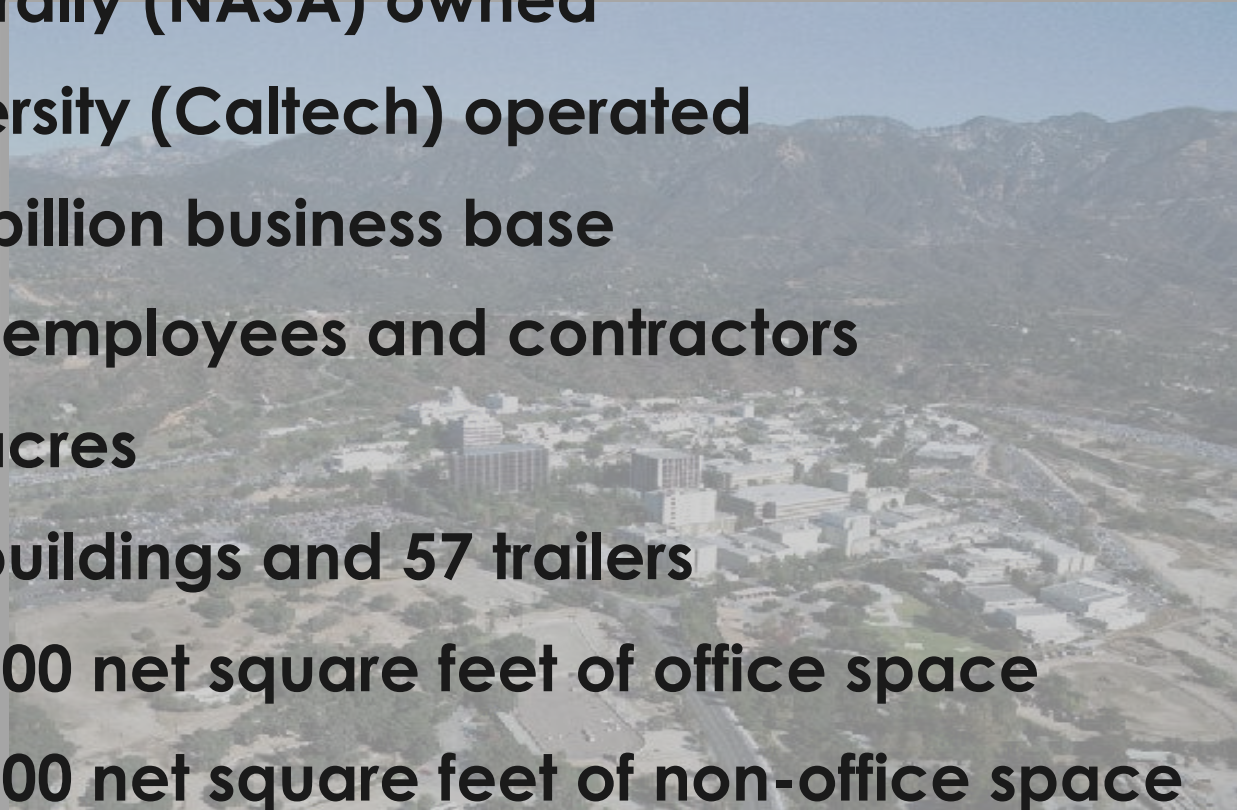


The Jet Propulsion Laboratory

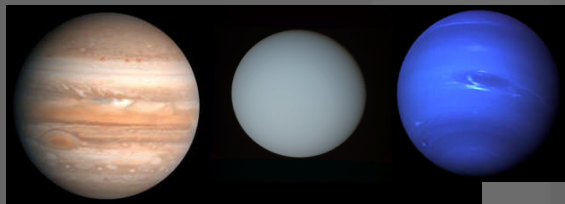


Background

- Federally (NASA) owned
- University (Caltech) operated
- \$1.5 billion business base
- 5000 employees and contractors
- 177 acres
- 134 buildings and 57 trailers
- 670,000 net square feet of office space
- 860,000 net square feet of non-office space



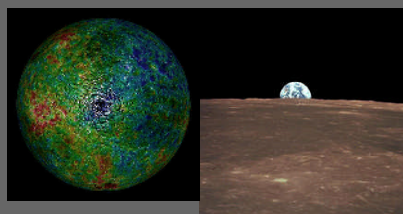
Forty-eight years of exploration



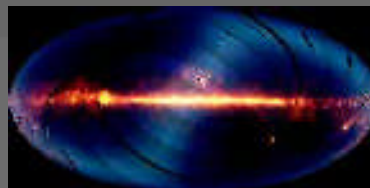
Giant Planets



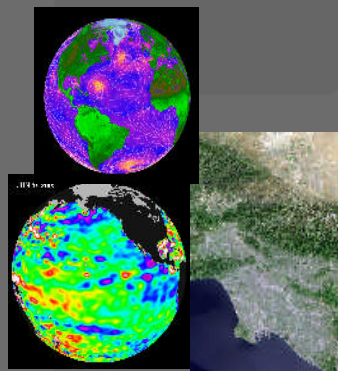
Small bodies



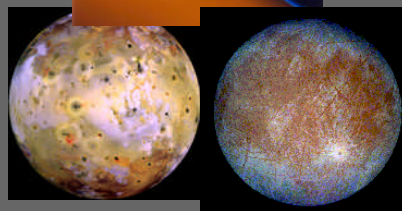
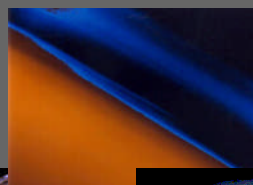
Earth's moon



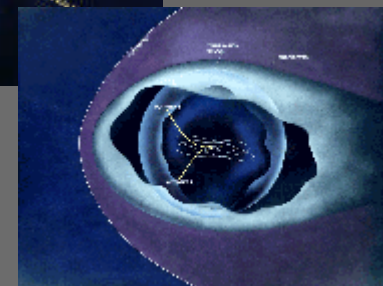
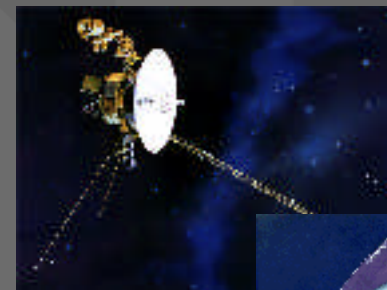
Astrophysics



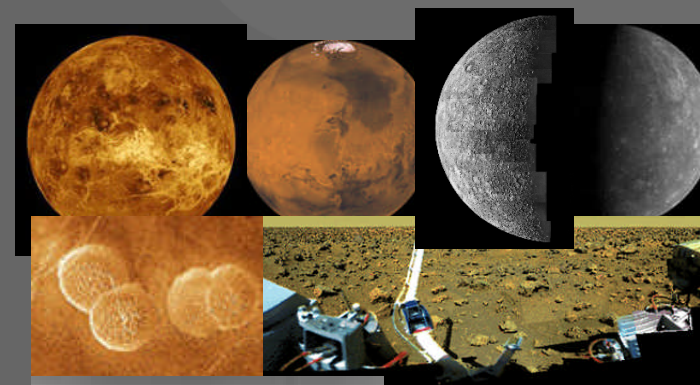
Earth



Planetary satellites



Interstellar space



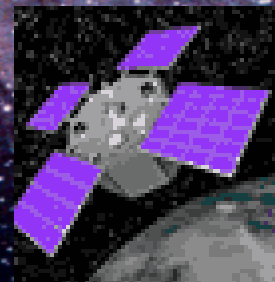
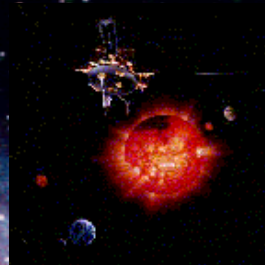
Terrestrial planets



Eighteen spacecraft and five instruments across the solar system (and beyond).



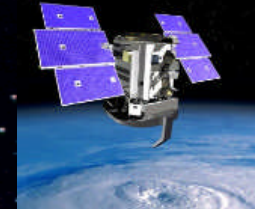
Spitzer studying stars and galaxies in the infrared



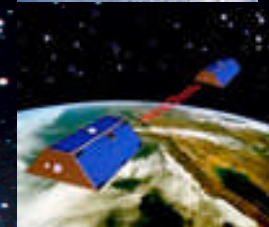
Ulysses and ACRIMSAT studying the sun



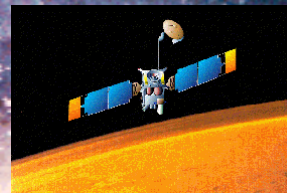
Cassini studying Saturn



Stardust carrier continuing after sample return



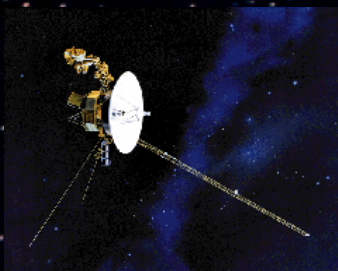
GALEX surveying galaxies in the ultraviolet



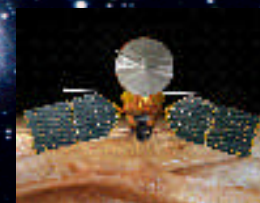
Deep Impact carrier continuing after hitting comet Tempel 1



QuikScat, Jason 1, CloudSat, and GRACE (plus ASTER, MISR, AIRS, MLS and TES instruments) monitoring Earth.



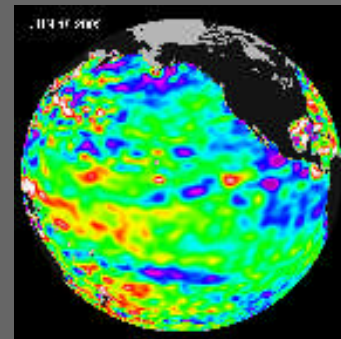
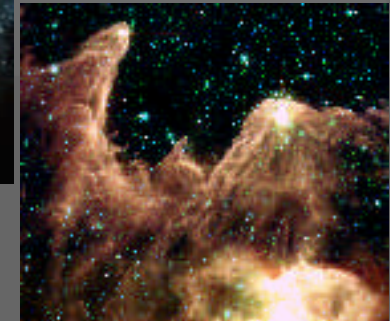
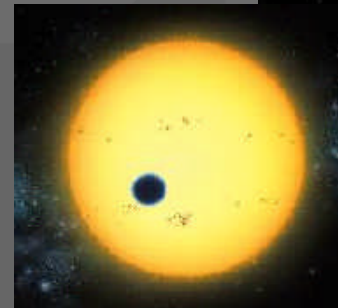
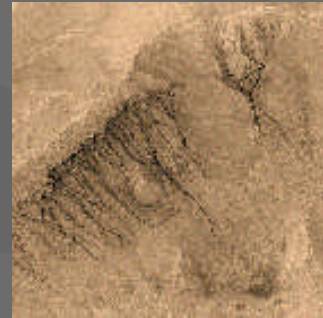
Two Voyagers on an interstellar mission



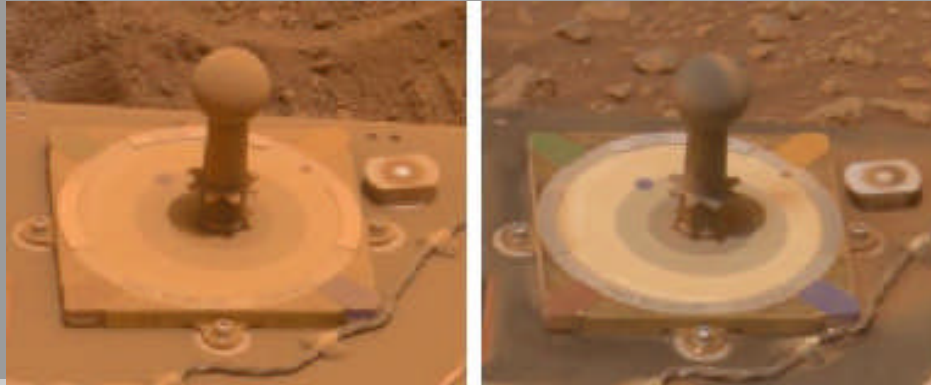
Mars Global Surveyor, Mars Odyssey, and MRO in orbit around Mars. "Spirit" and "Opportunity" in extended missions.

Realizing the Potential of Space Science in Five Themes

- **Mars exploration:
Follow the water**
- **Life-friendly sites in the
solar system**
- **Extra-solar planets**
- **Origins of galaxies and
the universe**
- **Our home planet, Earth**



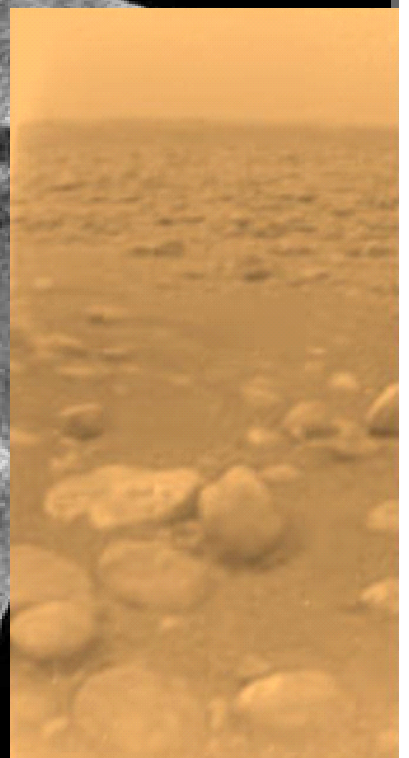
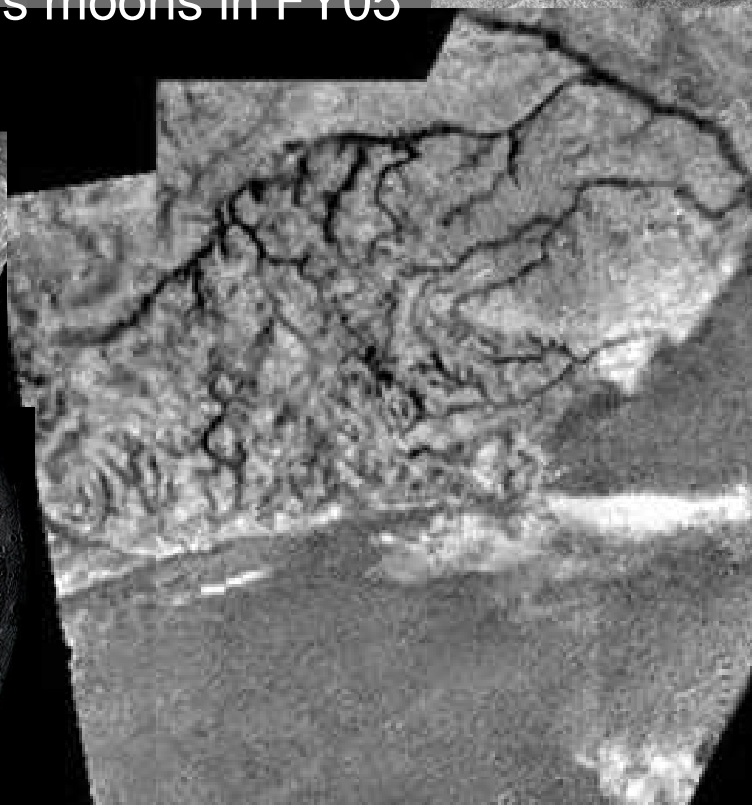
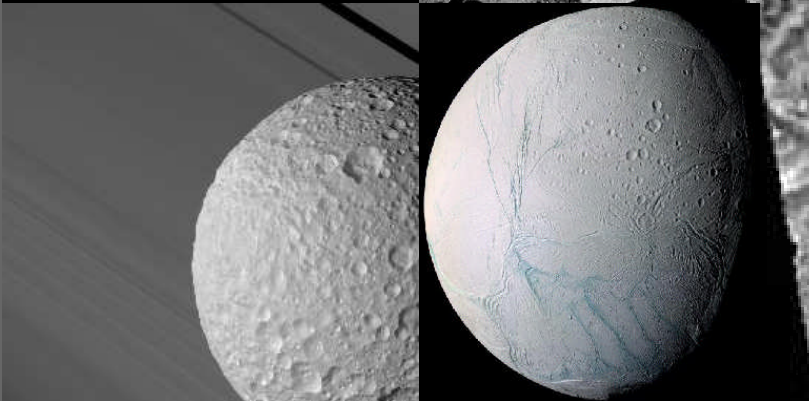
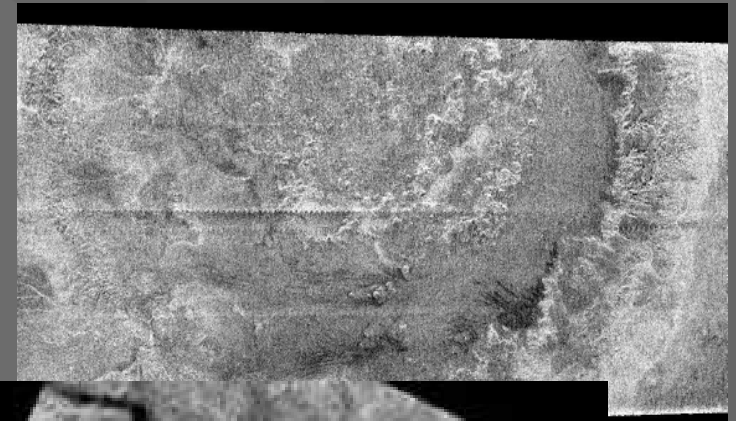
Mars Exploration Rovers in “eighth lifetime”



Dust devils as seen by *Spirit*, and *Spirit* surface before and after a “cleaning” event.

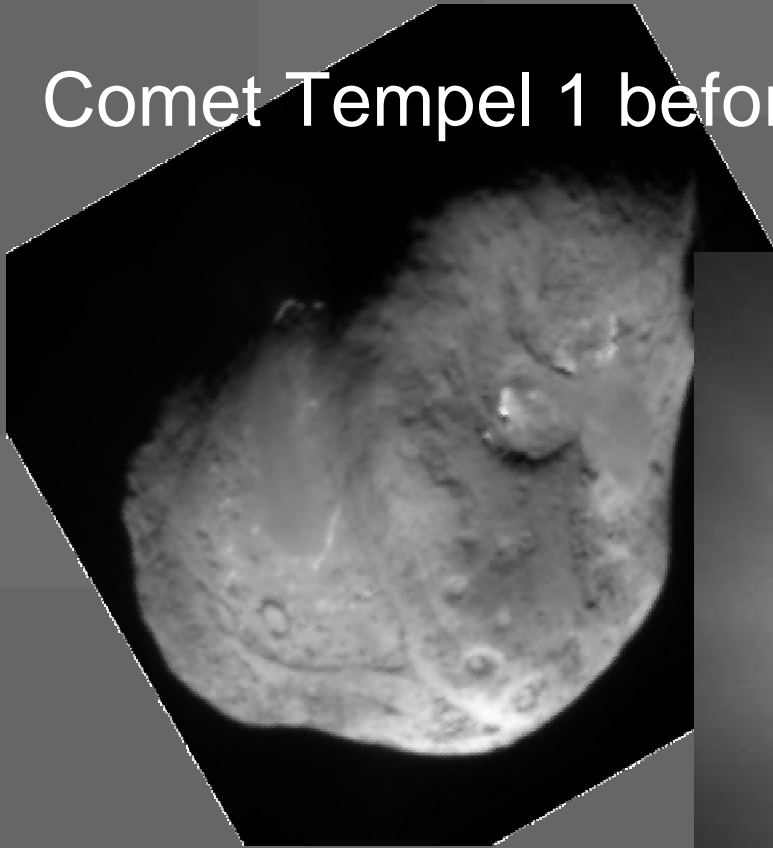
Cassini

- Carried Huygens, and communicated with it during Titan landing
- Studying Titan with radar and multispectral imaging
- Studying Saturn and its moons until 2008 and beyond
- 12 targeted flybys of Saturn's moons in FY05



Ouch!

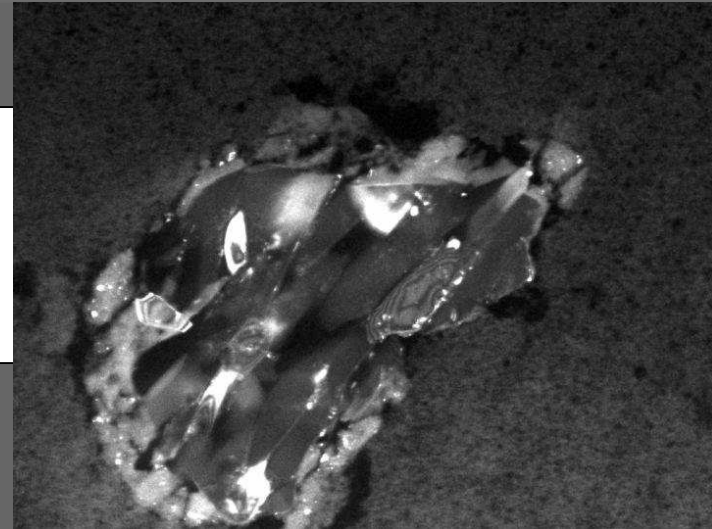
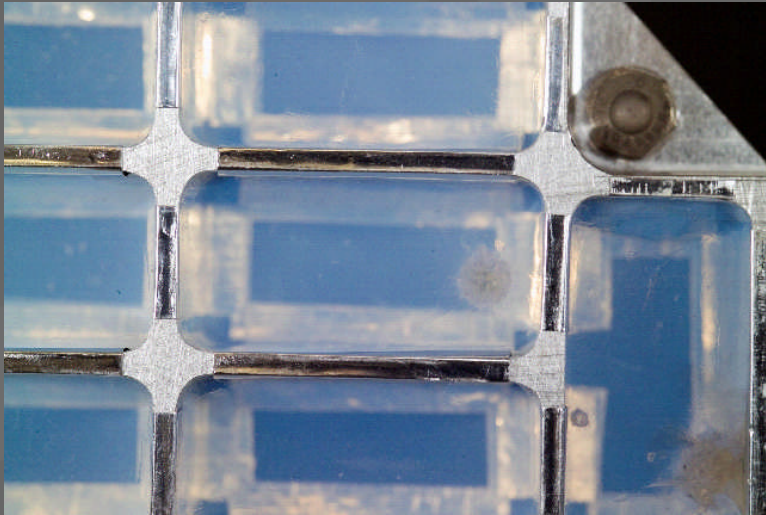
Comet Tempel 1 before and after Deep Impact



Stardust Returns

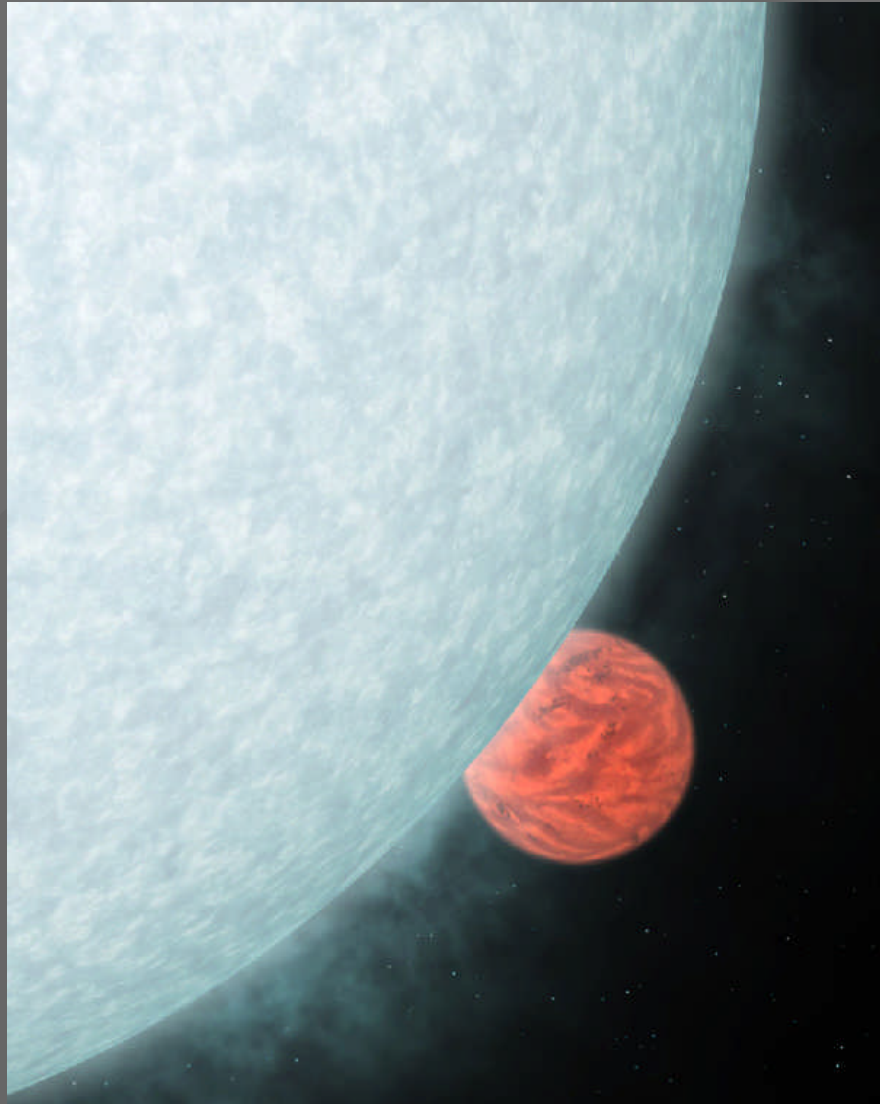


Comet particle in arojel...

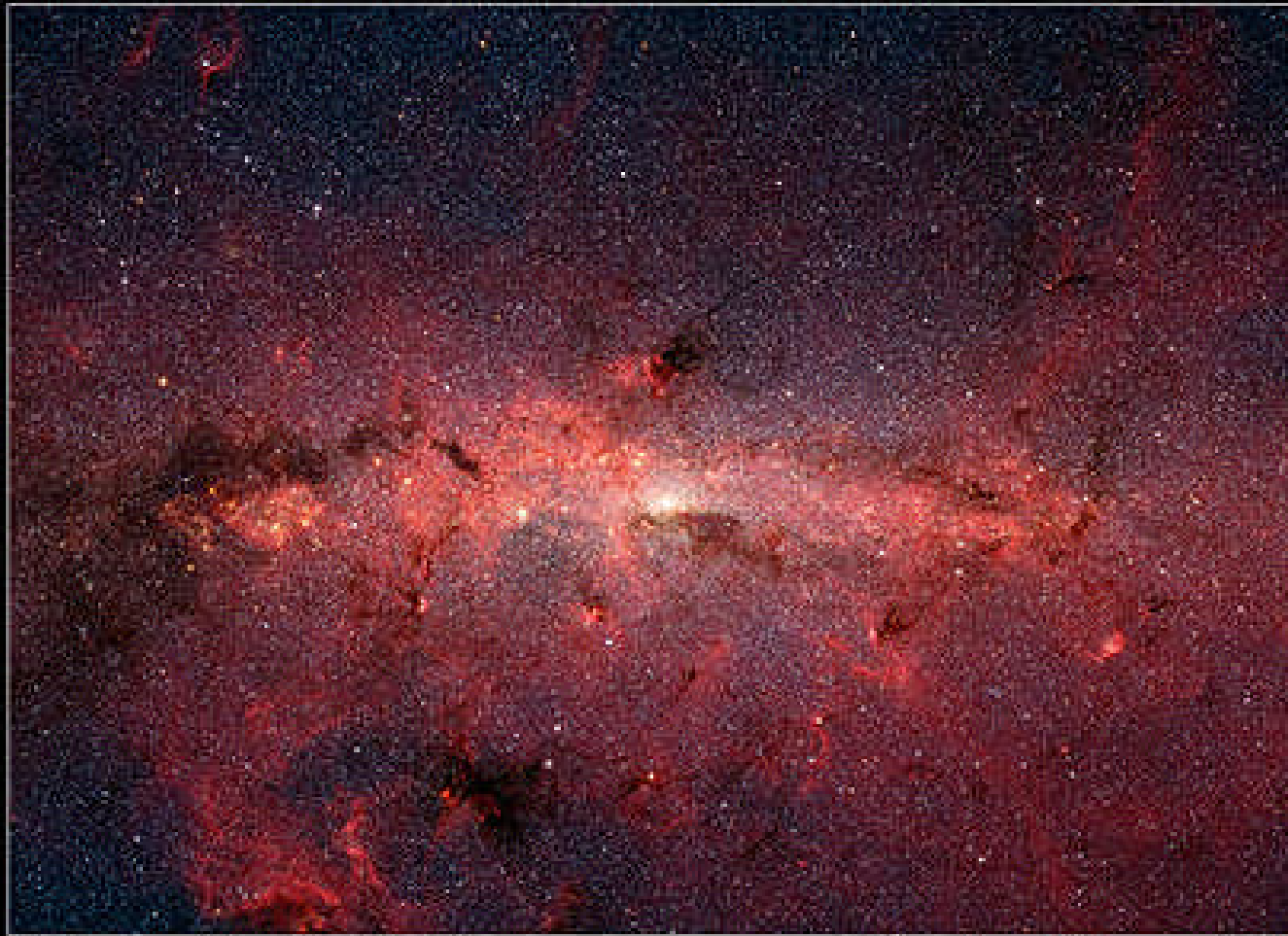


...and a two micron particle extracted from arojel.

Studying Extra-Solar Planets with Spitzer Space Telescope



Spitzer Sees Center of Our Milky Way Galaxy



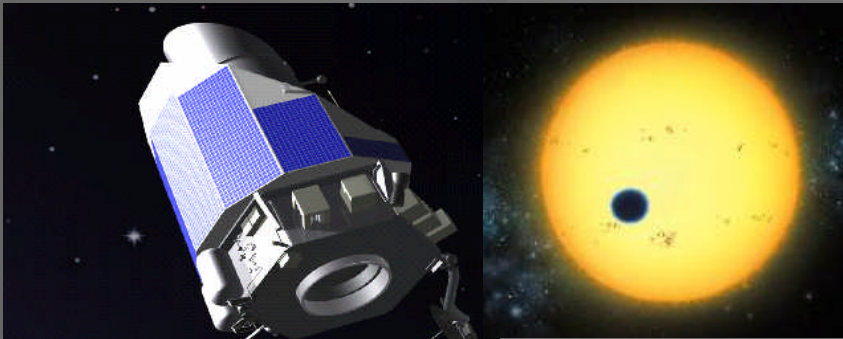
The Center of the Milky Way Galaxy

NASA / JPL-Caltech / S. Stolovy [Spitzer Science Center/Caltech]

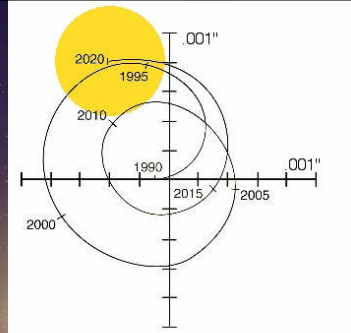
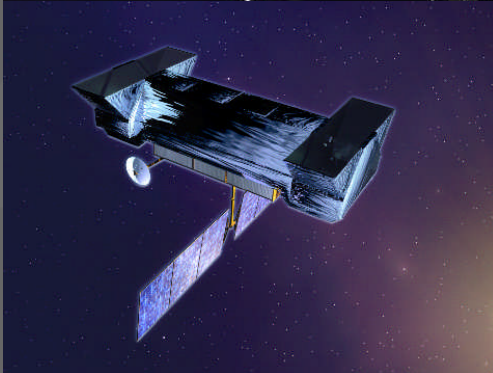
Spitzer Space Telescope • IRAC

ssc2006-02a

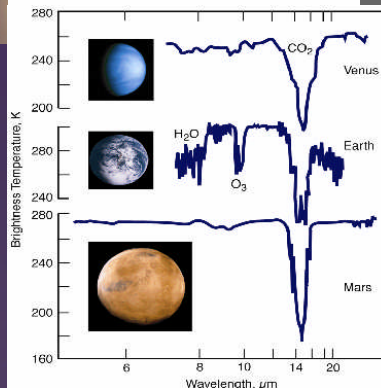
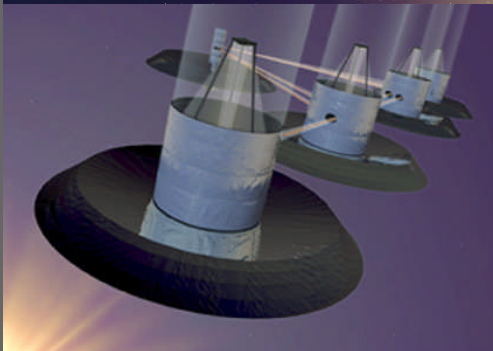
Future Exploration of Extrasolar Planetary Systems



Kepler Discovery mission in 2008 to observe transits of Earth-sized planets across stars



Space Interferometry Mission (SIM), to launch in 2011/15, performs astrometry of extra-solar planets



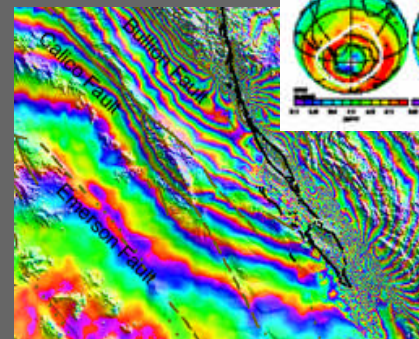
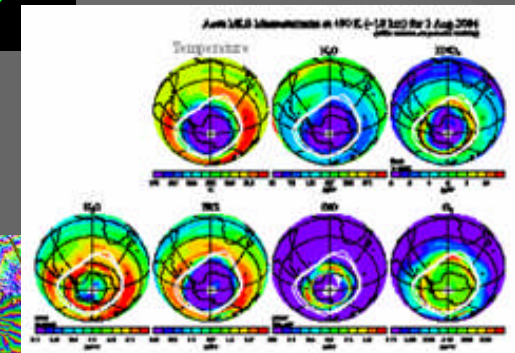
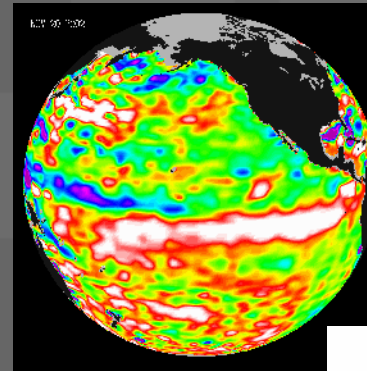
Terrestrial Planet Finder (TPF), to launch in 2015-2020, performs spectroscopy of extra-solar planets

NASA/JPL Spacecraft Improving Life on Our Planet

Ocean studies support
long-term weather
prediction

Atmospheric ozone studies
monitor human-caused
pollution

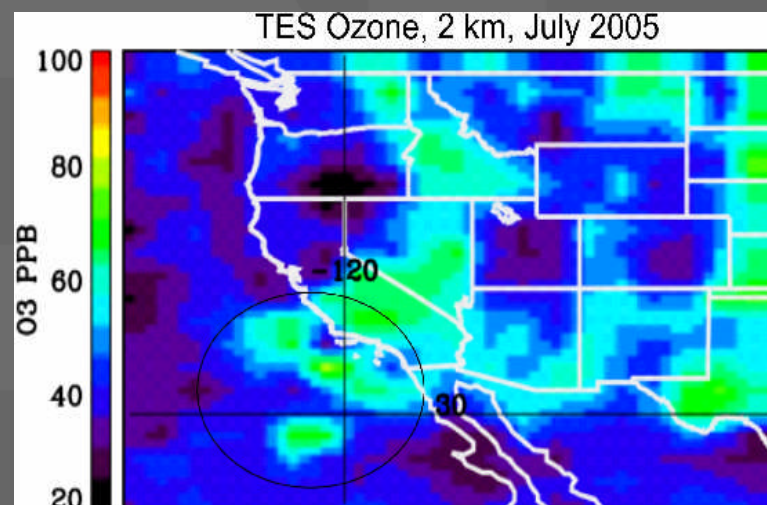
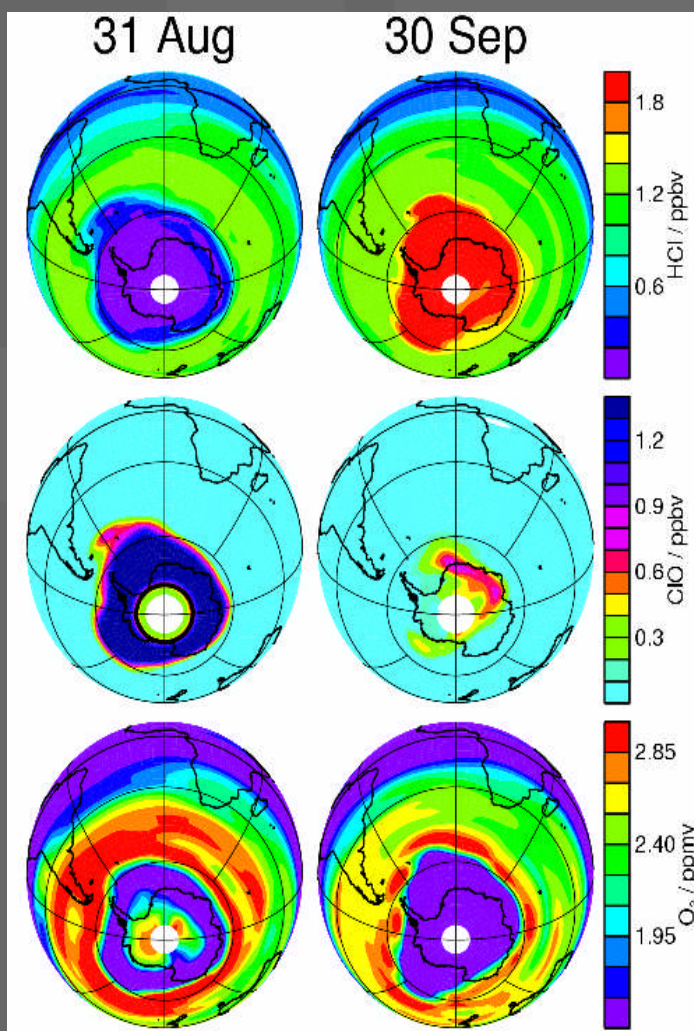
Solid Earth studies will aid in
future earthquake
prediction



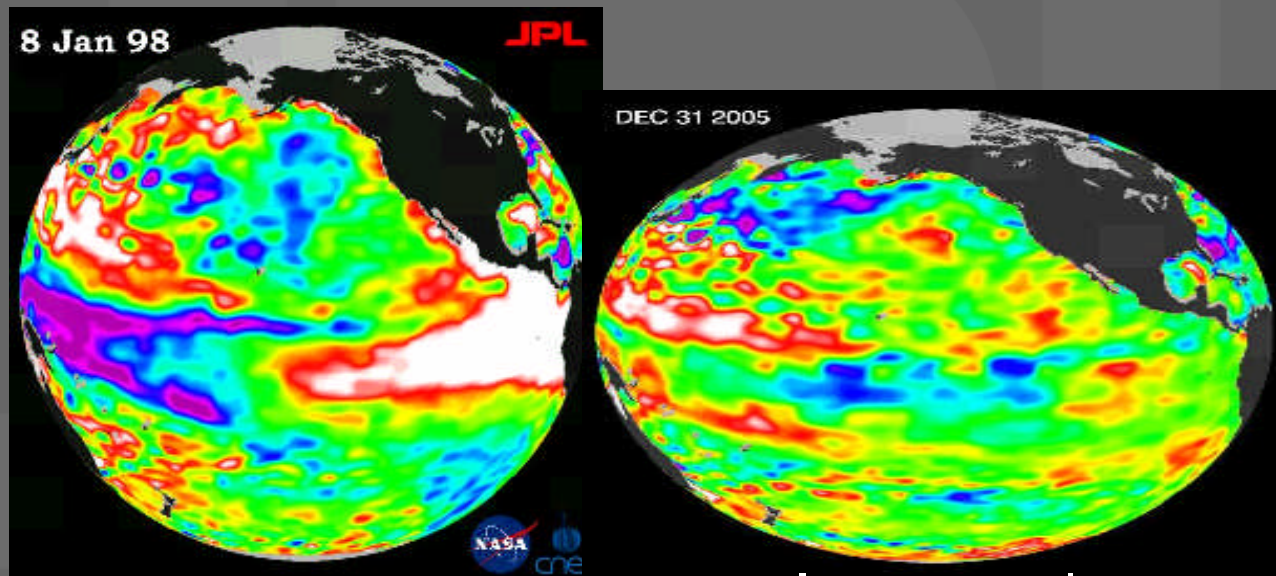
MLS and TES on Aura

Monitoring Stratospheric and Surface Ozone

The 2005 Antarctic ozone hole

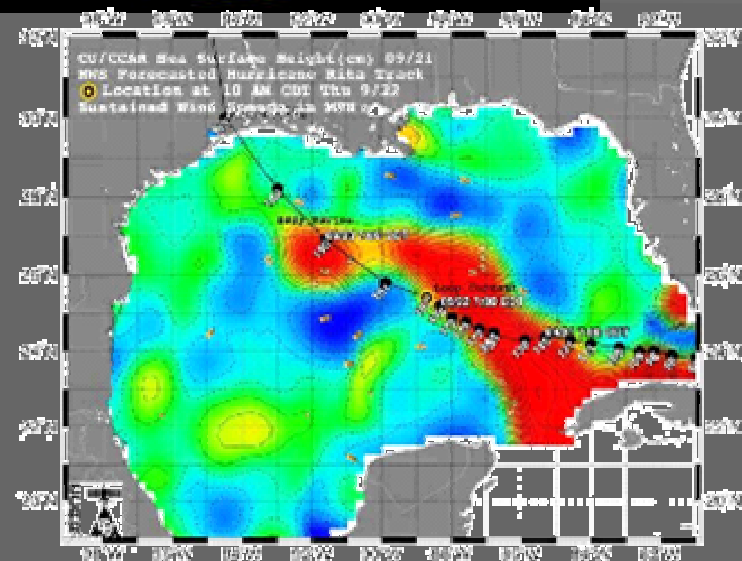


Topex/Poseidon A job well done for 13 years



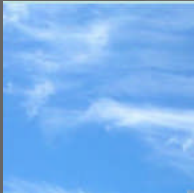
Monitoring the Earth's oceans:

- El Niño
- La Niña
- Hurricanes

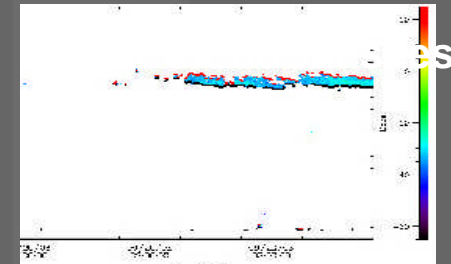
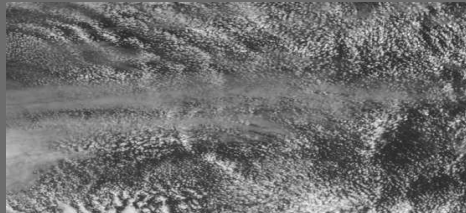


CloudSAT

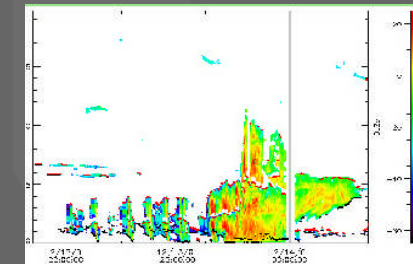
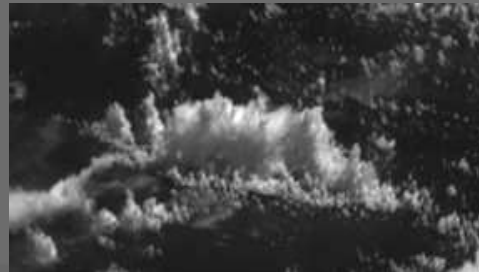
What we see



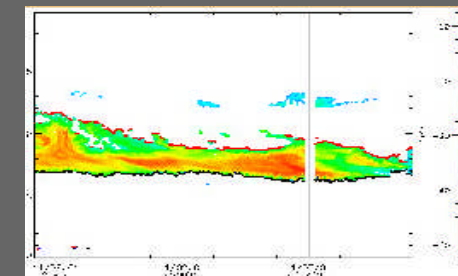
What MISR sees (slant view)



High level (6,000 meters) cirrus clouds are composed of ice crystals.



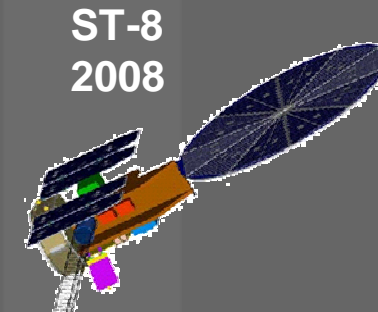
Vertically developed cumulonimbus clouds grow to heights in excess of 12,000 meters, and are a mixture of water droplets and ice crystals.



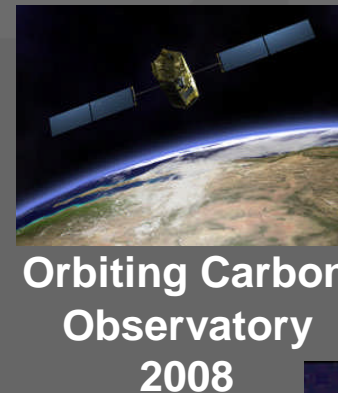
Low-level - 2,000 meters - stratus clouds can be accompanied by light to moderate precipitation.

Looking Ahead

Missions Under Development

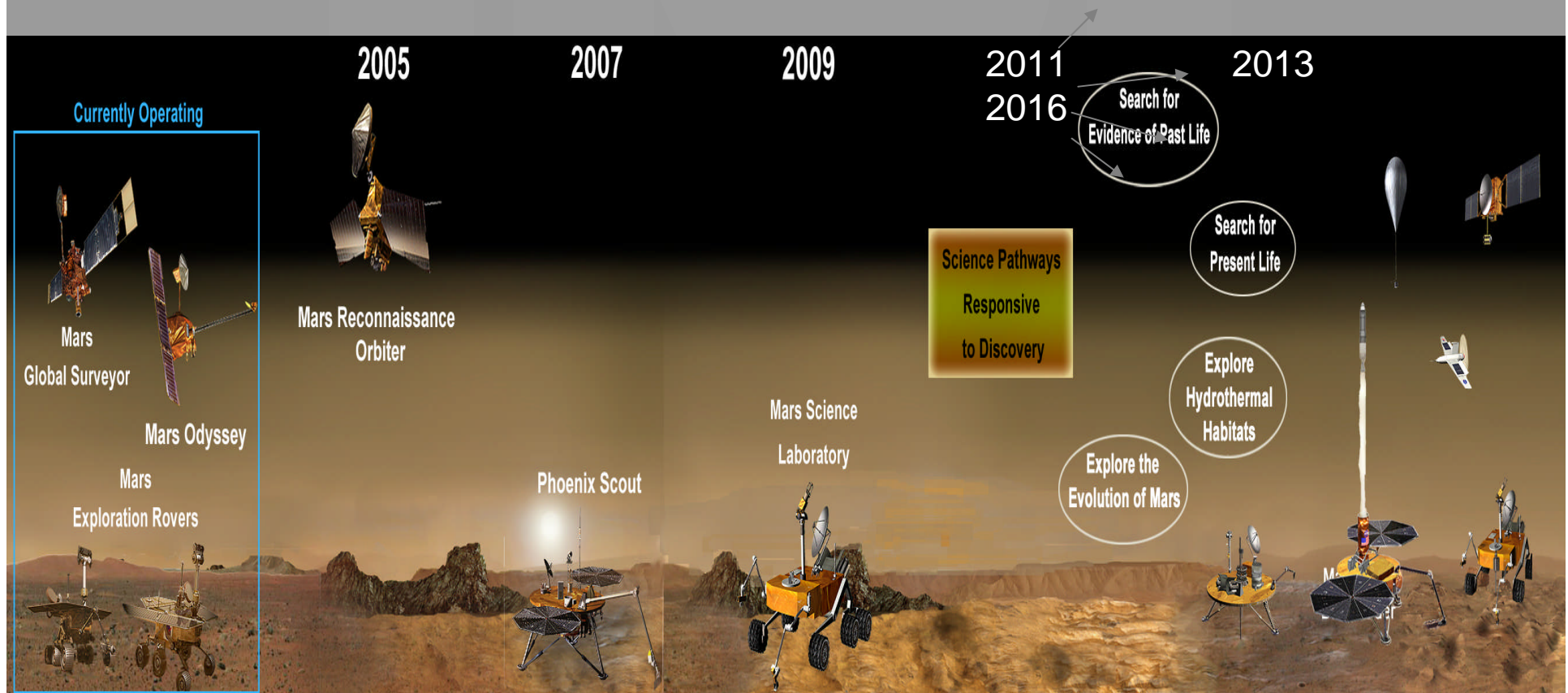


Kepler
2008



Mars Exploration Program

(2011 and beyond options under study)



Why Mars?

W

A

T

E

R

Life

Climate

Geology

When
Where
Form
Amount

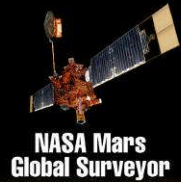
Prepare for Human
Exploration



Mars Exploration Program

Current Decade

1996



NASA Mars
Global Surveyor

1998

2001



NASA
Mars Odyssey

2003



European
Mars Express

2005



NASA Mars
Reconnaissance Orbiter

2007

2009

CURRENTLY OPERATING

NASA Mars Pathfinder
and Sojourner Rover



NASA Mars
Exploration Rovers



NASA Phoenix Scout



NASA Mars
Science Laboratory



Mars Science Laboratory

Salient Features:

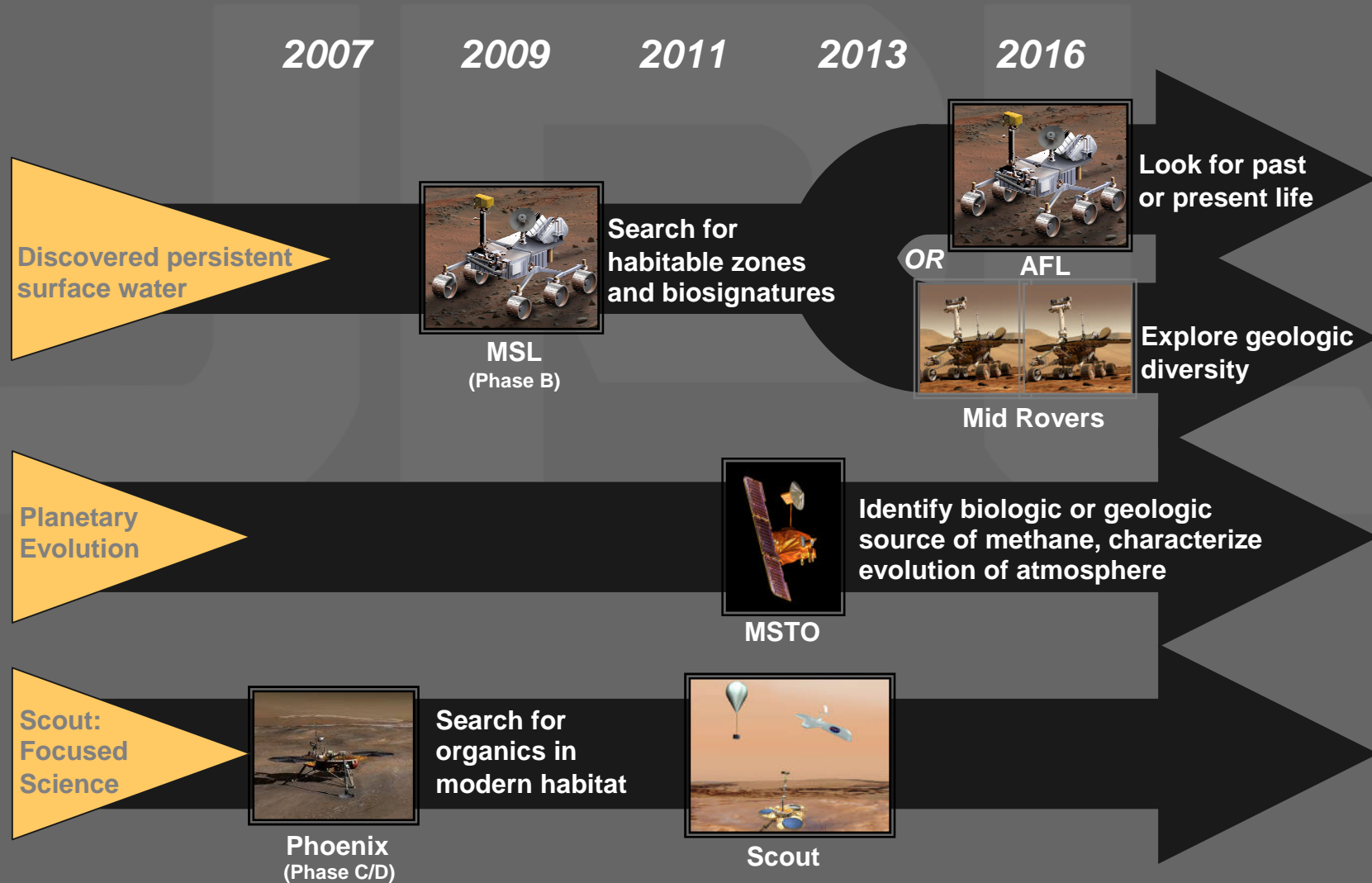
- Mobile Science Laboratory
- One Mars year surface operational lifetime (669 sols / 687 days)
- Discovery responsive over wide range of latitudes and altitudes
- Controlled propulsive landing
- Precision landing via guided entry

Science:

- Mission science will focus on Mars habitability
- Highly capable analytical laboratory science investigations
- Next generation remote sensing/contact investigations
- Suite of environmental monitoring instruments



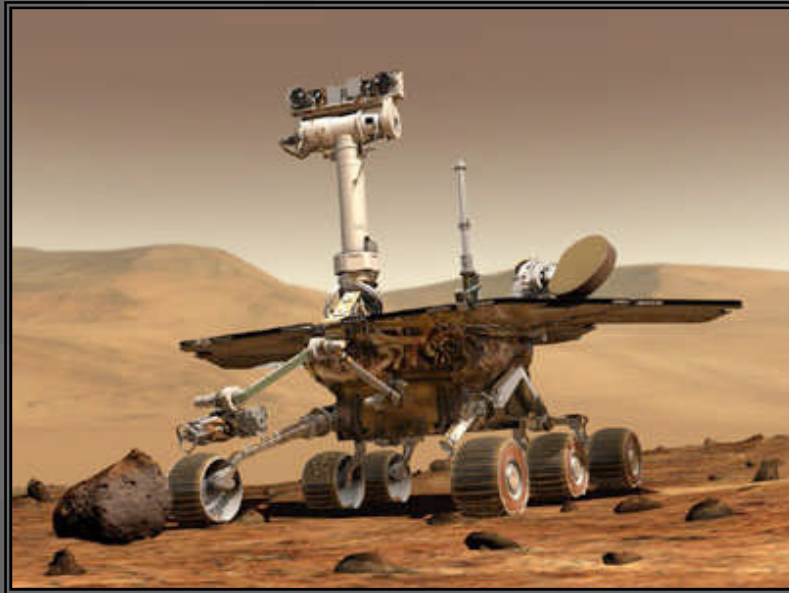
Mars Exploration Program Coming Decade Plan (Draft)



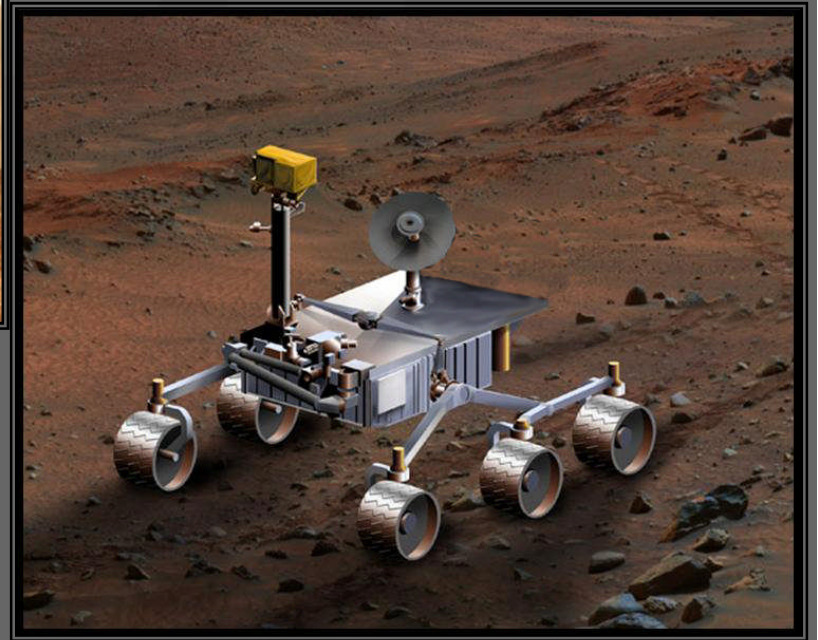
Mars Science and Telecom Orbiter



Mid Rovers



Astrobiology Field Laboratory



Mars Exploration Program

Missions Beyond 2016 (Draft)

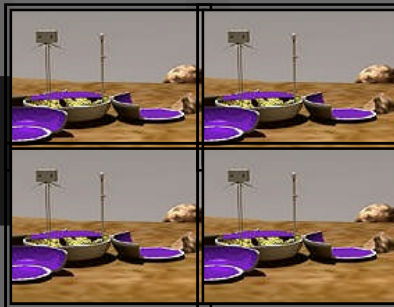
Laboratory
Studies



Mars Sample
Return

Study geological history and climate; test definitively for life; study evolution and interactions of atmosphere/hydrosphere/regolith

Planetary
Evolution



Network Landers

Understand structure, state and processes of interior; characterize meteorology

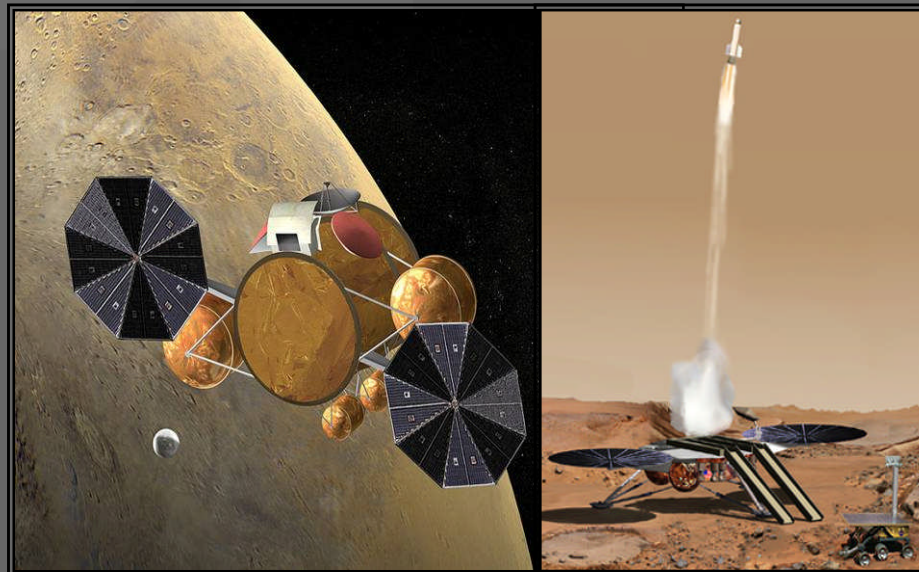
Scout:
Focused
Science



Scout

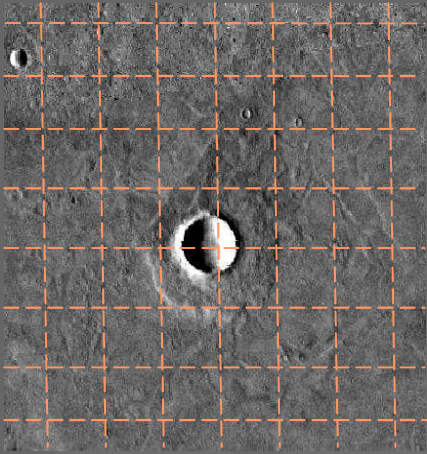
Focused studies of life, climate, and geological sciences

Planetary Evolution and Meteorology Network

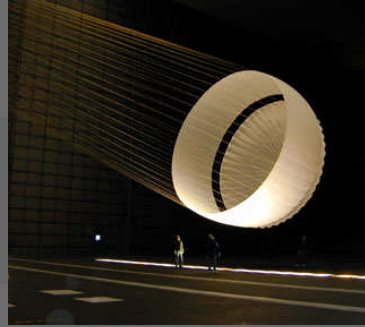


Mars Sample
Return

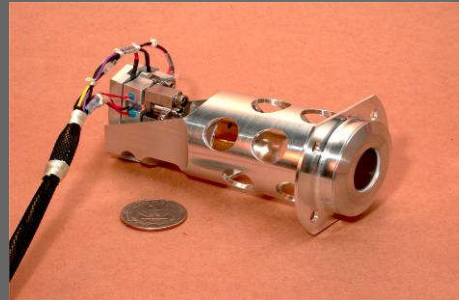
Future Technology Investments



**Precision Landing
and Terrain Sensing**



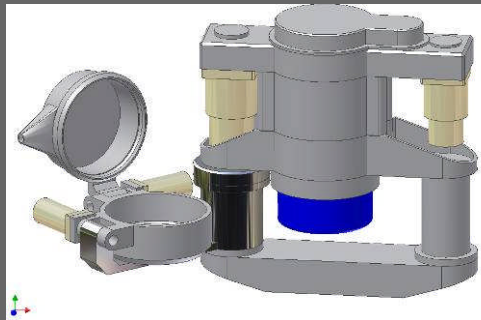
**High Mach
(2.5)
Supersonic
Parachute**



**Mars In-situ and
Remote Science
Instruments**



**Novel
Mobility Mechanisms
and Components**

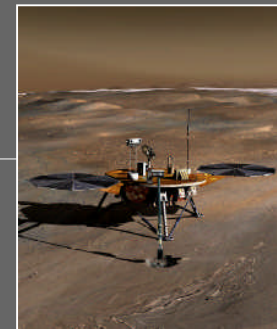
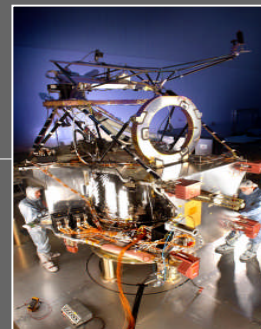


**Precision Sub-Sampling
for In-Situ Analysis**



Coring and Drilling

Connecting with JPL



Our Roles in the Competitive NASA

- JPL competes for its missions, just like industry
- NASA issues requirements [Announcement of Opportunities (AO)], which JPL competes for along with other organizations
- JPL tries to implement one or more missions in-house at all times, to maintain our skill base

Missions Under Development for Launch

Mars Phoenix polar lander ('07)

- Lockheed Martin Civil Space Systems, Denver, CO

Kepler ('08)

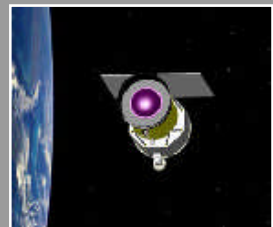
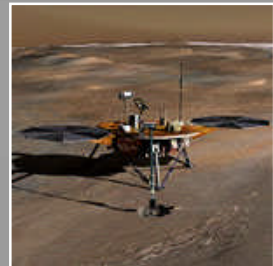
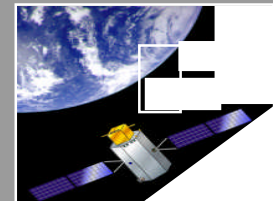
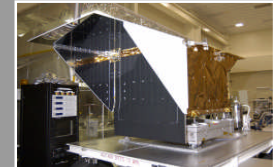
- Ball Aerospace, Boulder, CO

Orbiting Carbon Observatory ('08)

- Hamilton Sundstrand, Pomona, CA
- Orbital Sciences Corporation, Dulles, VA

Ocean Surface Topography Mission ('08)

- Subcontracting opportunities available



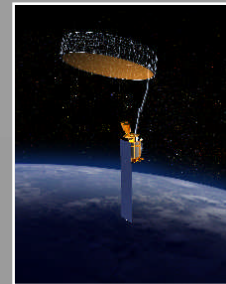
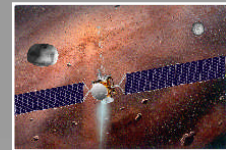
Missions Under Development for Launch

Wide-Field Infrared Survey Explorer (WISE) ('09)

- Ball Aerospace, Boulder, CO
- Utah State Univ. Research Foundation/SpaceDynamics Lab (SDL)

Mars Science Laboratory (MSL) ('09)

- In-house build



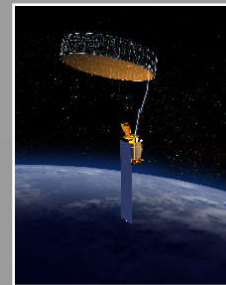
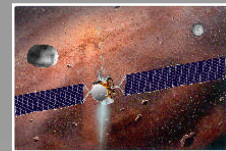
Missions Under Development for Launch

JUNO ('11)

- Lockheed Martin, Denver, CO

Space Interferometry Mission (SIM) ('11/15)

- Northrop Grumman Space Technology, El Segundo CA



Large Service Providers

Lockheed Martin Information Technology (LMIT), Pasadena, CA

- PC/MAC hardware and services

Raytheon, Pasadena CA

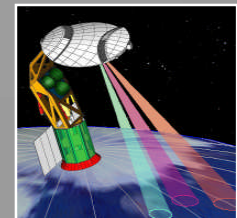
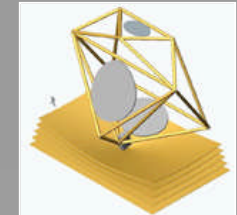
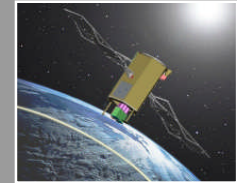
- Scientific data systems and analysis

Computer Science Corporation (CSC), Pasadena, CA

- Network infrastructure

All Star Service, San Diego, CA

- Facility maintenance and operations



Large Service Providers

Ball Aerospace, Boulder, CO

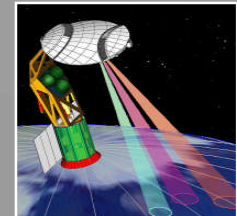
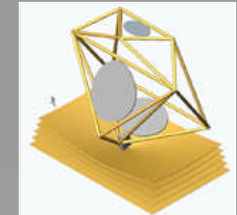
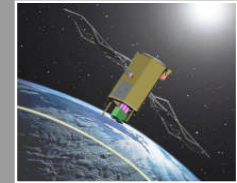
- Flight, instrument and subsystem tasks

Northrop-Grumman, Falls Church, VA

- Engineering technical and modeling, engineering support software maintenance and operations

Swales Aerospace, Beltsville, MD

- Mechanical and thermal engineering



Small Business Impact

- Employ half of all private sector employees
- Pay 45% of total U.S. payroll
- Generated 70-80% of new jobs
- 25% of Federal Prime Contracts in 2005
- 14% more patents per employee than large firms
- Employ 41% of high tech workers

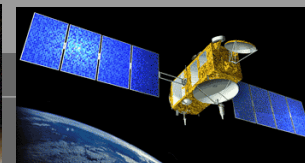
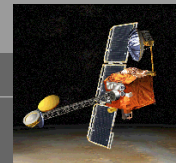
JPL's Commitment to Small Business

- Aggressive Small Business goals established each year for all categories of small businesses
- Large Business partners establish their own small business goals prior to receiving contracts
- NASA encourages aggressive socioeconomic goals in subcontracting plans

What do we buy?

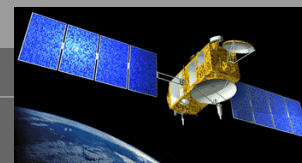
Spacecraft
Spacecraft Subsystems &
Assemblies
Spacecraft Instruments &
Science Investigations
R&D Studies/Hardware
Technology & Application
Programs

Commodities of all types
Computer
hardware/software
Subcontracted Support
Services
Facilities Construction



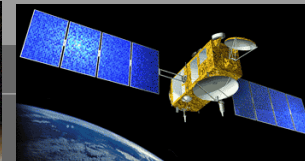
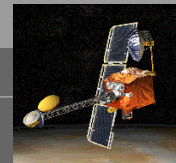
How do we buy it?

- Letters of Interest/Requests for Information
- RFQs/RFPs
- Unsolicited Proposals
- Low bid
- Evaluated selection
- P-Cards
- Commercial Items/Service Purchase Orders



How do we buy it? (continued)

- Blanket Agreements
- GSA Schedules
- E-Commerce/JIT
- Wide Range of Subcontracts:
 - Labor Hour/T&M
 - Fixed-Price
 - Cost-Reimbursable
 - Fixed Fee, Award Fee, Incentive Fee, Award Term



Connecting with JPL Acquisition

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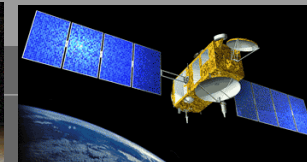
Martin Ramirez

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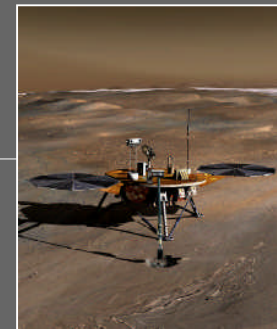
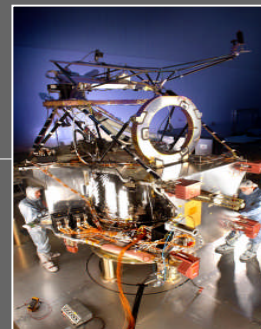
martin.m.ramirez@jpl.nasa.gov

Business Opportunities

- Explore all options
 - Prime
 - Subcontractor
 - Mentor Protégé
 - Team Member
- Get on bidders list
- Give a product demonstration
- Schedule a meeting with potential customer
- Contact cognizant Acquisition organization



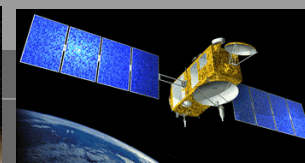
JPL's Proposal Process



Should I Propose?

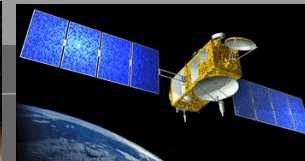
Thoroughly review and analyze the Request for Quotation/Proposal (RFQ/RFP)

- Are there minimum/mandatory requirements?
 - ✦ Don't bid if you can't meet the minimum requirements
- Identify requirement challenges. Can you successfully perform the job? If you need more information, ask questions!
- Do you have any concerns meeting:
 - Work Scope
 - Delivery Schedule
 - Budget Constraints
 - Terms & Conditions



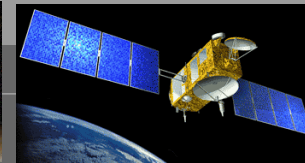
Should I Propose? (continued)

- Can you offer a competitive price/cost?
- Any past performance issues?
- Assess your potential competition
- Should you team with another organization
- Understand the evaluation factors and their relative importance:
 - Technical
 - Management
 - Cost or price
 - Financial capability
 - Past performance



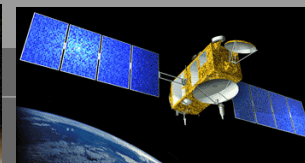
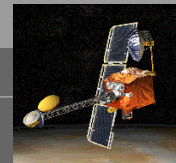
Should I Propose? (continued)

- Attend the pre-proposal conference which may include:
 - Q&A sessions
 - Job Walk
 - Observation of on-going operations
 - Overview of the Project



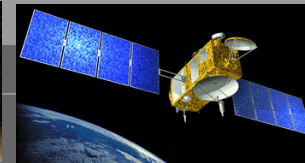
Successful Proposal Preparation

- Review proposal instructions carefully.
- Establish a schedule. Allow time for:
 - Graphics, printing, reproduction, shipment
 - Revision of cost/price to reflect technical/management changes
 - Vendor/subcontractor quotes & proposals
 - Management/legal review
- Identify critical requirements and brainstorm cost-effective solutions.
- Establish a proposal team:
 - Accountable leader
 - Specialists for evaluation factors and compliance topics



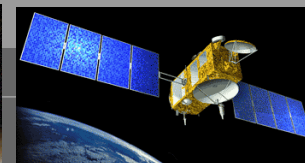
Successful Proposal Preparation

- Create a “compliance matrix” listing every requirement in statement of work and specification. Do you exceed, meet, or fail to meet any requirement?
 - Don’t meet = Don’t bid
 - If you exceed, does the cost of exceeding make sense
- Create a proposal theme:
 - “Leading experts in the country”
 - “Highest reliability”
 - “Low life cycle cost”



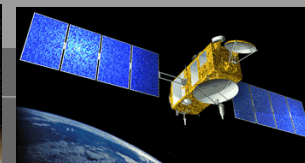
Successful Proposal Preparation (cont.)

- Format the proposal to match the proposal instructions.
 - *Include Table of Contents*
 - *Put the material in the volume/section specified*
 - *Comply with page limitations*
 - *Compliance matrices should cross-reference the WBS, paragraphs in the specification, etc.*
- Control solicitation period communications
 - *Single point of contact*
 - *Clear paper trail*
- Respond to every instruction and requirement



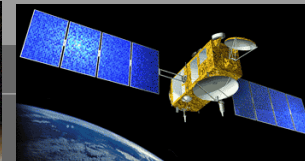
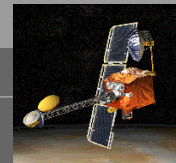
How to Win a Competition

- Have the lowest price/cost
- Have the best value with a reasonable price
- Meet the requirements of the sponsor
- Write a clear and concise quote/proposal
- Include all required information
 - All proposal volumes
 - Forms
 - Certifications
- Have solid financial responsibility
- Propose a strong/experienced/available team
- Have strong past performance

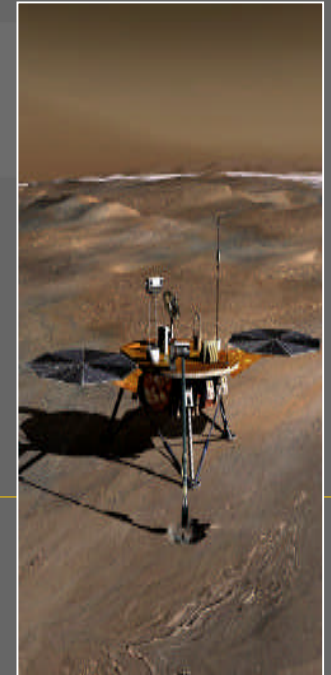
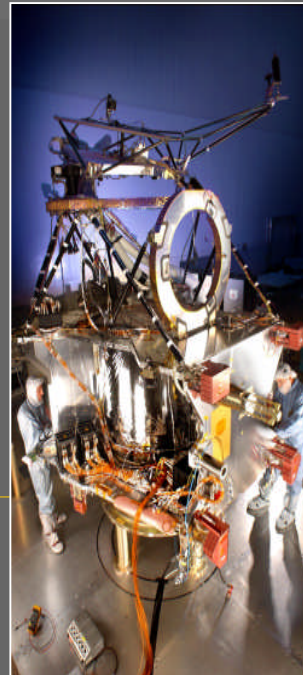


How to Lose a Competition

- Deliver proposal late
- Be too expensive
- Have critical weaknesses
- Throw something together at the last minute
- Fail to understand what the customer wants
- Take exception or fail to comply with requirements
- Fail to provide all requested information
- Propose unrealistic schedules, pricing or technological advances
- Assume you can get well later
- Fail to take advantage of debriefing process



Contract Performance



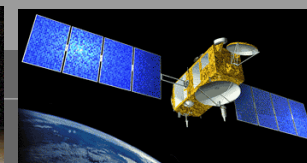
Establish Expectations

Hold kick-off meeting

- Introduce key individuals
 - Project Management, Contracts, Finance, QA, etc.
- Review requirements
 - Understand support service issues, documentation requirements, technical requirements
- Understand schedule demands
 - Ensure that both sides realize the significance of identified dates

Clarify expectations

- Any open issue should be resolved quickly

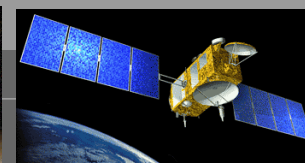


Understand Delivery Requirements

Deliverables can take many forms

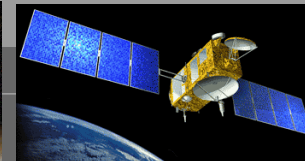
- Initial Schedules
- Financial Reports
- Monthly Management Reviews
- Various Technical Reviews
- Quality and Reliability Reports
- Software
- Drawings
- Documentation
- Support Services
- Hardware or Required Items

Each is vital in it's own way to the success of the contract



Monitor Performance

- Nature of effort will dictate level of surveillance
- Understanding of all requirements will ensure success
 - Technical and Administrative requirements are both important
- Keep lines of communication open
- Remember that our success depends largely on you!



Q & A

